

In the Claims:

Please cancel claims 33-62, 64-127 and 129 without prejudice

This listing of claims will replace all prior versions, and listings, of claims in the above-captioned application:

Listing of the Claims

1. (Original) A method of preparing an implant, comprising:
subjecting a substrate to a gas-plasma treatment; and
exposing the substrate to living cells, wherein a portion of the living cells become coupled to the substrate; and
wherein the living cells coupled to the treated substrate produce more of a cellular product than living cells coupled to an untreated substrate.
2. (Original) The method of claim 1, wherein the substrate comprises a biocompatible material.
3. (Original) The method of claim 1, wherein the substrate comprises a polymeric material.
4. (Original) The method of claim 1, wherein the substrate comprises a bioresorbable polymeric material.
5. (Original) The method of claim 1, wherein the substrate comprises a polylactide polymeric material.

6. (Original) The method of claim 1, wherein the substrate comprises a three-dimensional matrix.
7. (Original) The method of claim 1, wherein the substrate comprises a planar solid.
8. (Original) The method of claim 1, wherein the substrate comprises a nonplanar solid.
9. (Original) The method of claim 1, wherein the implant is a medical implant.
10. (Original) The method of claim 1, wherein subjecting the substrate to a gas-plasma treatment comprises exposing the substrate to a reactive gas, wherein the reactive gas comprises oxygen.
11. (Original) The method of claim 1, wherein subjecting the substrate to a gas-plasma treatment comprises exposing the substrate to a reactive gas, wherein the reactive gas consists essentially of oxygen.
12. (Original) The method of claim 1, wherein a duration of the gas-plasma treatment is from about 1 minute to less than about 5 minutes.
13. (Original) The method of claim 1, wherein subjecting the substrate to a gas-plasma treatment comprises exposing the substrate to a reactive gas at a temperature of less than about 50 °C.
14. (Original) The method of claim 1, wherein subjecting the substrate to a gas-plasma treatment comprises exposing the substrate to a reactive gas at a pressure between about 0.01 torr and about 10 torr.

15. (Original) The method of claim 1, wherein subjecting the substrate to a gas-plasma treatment comprises exposing the substrate to a reactive gas with a supplied energy between about 5 kJ and about 10 kJ.
16. (Original) The method of claim 1, wherein subjecting the substrate to a gas-plasma treatment comprises exposing the substrate to a reactive gas at a discharge frequency between about 10 KHz and about 100 GHz.
17. (Original) The method of claim 1, wherein subjecting the substrate to a gas-plasma treatment comprises exposing the substrate to a reactive gas at a discharge frequency between about 13 MHz and about 14 MHz.
18. (Original) The method of claim 1, wherein subjecting a substrate to a gas-plasma treatment comprises subjecting the substrate to a reactive gas comprising oxygen for a duration from about 1 minute to less than about 5 minutes, at a temperature of less than about 50 °C and a pressure between about 0.01 torr and about 10 torr, with a supplied energy between about 5 kJ and about 10 kJ and a discharge frequency between about 13 MHz and about 14 MHz.
19. (Original) The method of claim 1, wherein the living cells comprise endothelial cells.
20. (Original) The method of claim 1, wherein the living cells comprise human aortic endothelial cells.
21. (Original) The method of claim 1, wherein the living cells comprise muscle cells.
22. (Original) The method of claim 1, wherein the living cells comprise myocardial cells.
23. (Original) The method of claim 1, wherein the living cells comprise epithelial cells.

24. (Original) The method of claim 1, wherein the cellular product comprises a nucleic acid.
25. (Original) The method of claim 1, wherein the cellular product comprises a protein.
26. (Original) The method of claim 1, wherein the cellular product comprises β -tubulin.
27. (Original) The method of claim 1, wherein the cellular product comprises a growth factor.
28. (Original) The method of claim 1, wherein the cellular product comprises vascular endothelial growth factor.
29. (Original) The method of claim 1, wherein the cellular product comprises basic fibroblast growth factor.
30. (Original) The method of claim 1, wherein the cellular product comprises epidermal growth factor.
31. (Original) The method of claim 1, wherein the cellular product comprises platelet-endothelial cell adhesion molecule-1.
32. (Original) An implant prepared by a process comprising:
 - subjecting a substrate to a gas-plasma treatment; and
 - exposing the substrate to living cells, wherein a portion of the living cells become coupled to the substrate; and
 - wherein the living cells coupled to the treated substrate produce more of a cellular product than living cells coupled to an untreated substrate.

Claims 33-62 (Cancelled)

63. (Original) A method of preparing an implant, comprising:
treating a substrate with a gas-plasma treatment, wherein a supplied energy of the gas-plasma treatment is between about 5 kJ and about 10 kJ and a treatment temperature of the gas-plasma treatment is less than about 50 °C; and
exposing the substrate to living cells;
wherein the living cells coupled to the treated substrate produce more of a cellular product than living cells coupled to an untreated substrate.

Claims 64-127 (Cancelled)

128. (Original) A method of preparing an implant, comprising:
subjecting a polymeric substrate to a gas-plasma treatment, wherein subjecting the substrate to a gas-plasma treatment comprises exposing the substrate to a reactive gas, wherein the reactive gas comprises oxygen, and wherein a supplied energy of the gas-plasma treatment is between about 5 kJ and about 10 kJ, and wherein a treatment temperature of the gas-plasma treatment is less than about 50 °C, and wherein a duration of the gas-plasma treatment is from about 1 minute to less than about 5 minutes, and wherein a discharge frequency of the gas-plasma treatment is between about 13 MHz and about 14 MHz; and wherein a pressure of the gas-plasma treatment is between about 0.01 torr and about 10 torr; and
exposing the substrate to living cells; and
wherein the living cells coupled to the treated substrate produce more of a cellular product than living cells coupled to an untreated substrate.

Claim 129 (Cancelled)